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ABSTRACT

These conference proceedings consider the unique needs of gifted and talented individuals, focusing on state-of-the-art knowledge regarding school reform initiatives, cooperative learning, creative achievement, social-emotional development, differentiated curriculum, charter schools, and parenting issues. Summaries are provided of the following presentations: "Fostering Creative Achievement: What Sort of Environment?" (Jock Abra); "Activities for Gifted Students That Enhance Math Understanding" (Cynthia Ballheim); "Narrative Knowledge of Talented Children" (Lynn Davis); "Narrative Development of Average and Exceptional Writers" (Randy Genereux); "'Talk' among a Community of Learners" (Anne Green); "The Charter School: Is It a Plan?" (Don Green); "Activities and Materials Teachers Can Use with Bright Students and Their Peers in the Regular Classroom" (Lannie Kanevsky); "Perfectionism and Giftedness: Examining the Connection" (Michael C. Pyryt); "Physiological Reactivity Levels of Normative, Gifted, and Gifted Students with Behaviour Problems: A Stress Test Simulation" (Dianna Shaffer); "Hip Geeks: A Study of the Emerging Identities of Gifted Young People" (Cheryl Simser and Janice A. Leroux); and "Provisions for Gifted Students in Regular Classrooms" (Carolyn Yewchuk). (Some presentations contain references). (SW)

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"Advancing Excellence"

CONFERENCE PROCEEDINGS

5th Annual SAGE Conference
September 30-October 1
1994
The University of Calgary
Calgary, Alberta

Society for the Advancement of Gifted Education

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ADVANCING EXCELLENCE
1994

CONFERENCE PROCEEDINGS

5th Annual SAGE Conference
The Society for the Advancement of Gifted Education

Conference Proceedings produced by
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ADVANCING EXCELLENCE

5th Annual SAGE Conference

The Society for the Advancement of Gifted Education (SAGE) is an umbrella organization consisting of the primary stakeholders in gifted education in Alberta: the Centre for Gifted Education (CGE) at The University of Calgary, the Gifted and Talented Education Council (GTEC) of the Alberta Teachers' Association, the Educational Response Centre (ERC) of Alberta Education, and the Alberta Associations for Bright Children (AABC).

The 5th Annual SAGE Conference with a theme of *Advancing Excellence* was held at The University of Calgary on September 30-October 1, 1994.

The major focus of the Conference was to explore "state-of-the-art" knowledge regarding school reform initiatives, cooperative learning, creative achievement, social-emotional development, differentiated curriculum, charter schools, and parenting issues as they relate to the unique needs of gifted and talented individuals. A unique feature of this year's conference was the development of a Youth Strand component that was integrated into the conference.

We are pleased to provide this document, which represents summaries of selected conference sessions. For those participating in the 5th Annual SAGE Conference, we hope these Proceedings capture the spirit of the conference. It should be noted that Dr. Gallagher's keynote presentation appears in the Fall 1994 AGATE (Journal of the Gifted and Talented Educational Council of the Alberta Teachers' Association) as an article entitled *National Excellence: At No Cost?*

We are grateful to our sponsors: The University of Calgary Special Projects Fund, Petro Canada, Wildfire Creations. We hope you find these Proceedings informative.

Michael C. Pyryt
Janneke Ruysenaars
Conference Co-Directors

CONFERENCE PROCEEDINGS
1994
5th Annual SAGE Conference
'Advancing Excellence'

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Fostering Creative Achievement: What Sort of Environment?

Jock Abra
The University of Calgary

It is important for the well being of both society and talented individuals that they fulfill their potential. Two approaches disagree about the environment that will best help them do so. Humanists such as Maslow and Rogers advocate a hothouse environment. Young creators, like plants, will grow best under encouraging circumstances that minimize such negative experiences as failure and frustration. Creativity, a natural tendency everyone possesses, will emerge if the environment allows uninhibited expression of intuitive impulses and satisfies deficit needs such as for security and love.

Such environments do increase the creativity measured by various tests, in general populations such as college undergraduates. Unfortunately, the relevance to great achievements realized by the Mozarts, Einsteins and Picassos is questionable, since the predictive validity of such tests is minimal and such achievement are probably realized by far from ordinary persons. Maddi therefore advocates excellence through rigor. In practice, creative people will inevitably experience considerable doses of frustration and failure, ridicule or apathy from others and minimal material pay-offs, and they will learn to persevere through these difficulties only if they experience them.

In support, the lives of most great creators feature such negatives as parental bereavement and dysfunctional families; Virginia Woolf was a victim of incest, Beethoven of frequent beatings from his drunken father and Eugene Oneill's family situation as portrayed in Long Days Journey Into Night imitates a soap opera. As

Freud intimated, satisfied people do not create, whereas most great creators drive to work approaches obsession. As well, they must be perfectionists who set high standards for themselves, condemning them to failure in their own eyes if not in others'. Bloom found that the parents of such persons were usually themselves perfectionists who not only preached but practiced such values as "always do your best" and "anything worth doing is worth doing well" that their offspring presumably imitated. Whereas hothouses, by advocating maximum rewards for even minimal accomplishments, give little reason to try to improve.

However each approach offers abilities prospective creators will need; from hothouses should come uninhibited spontaneity, from rigor, self-discipline and perseverence through frustration. Therefore several followers of Piaget have advocated combining the best of both worlds. Piaget claimed that the impact of an experience depends on the stage of development in which it occurs. According to Gardner, artistic ability develops through several such stages. In the golden age of art (typically ages 2-7) children take part in such activities enthusiastically, with results that are remarkably imaginative, spontaneous and unihibited. This suggests that a hothouse approach will have its greatest impact at this time and its contributions be most effectively internalizede. But later (usually ages 7-11) a literal stage comes to the fore. Enthusiasm for art declines appreciably and technique, accuracy (does my tree look like a real tree?) and "the right way to do it" become the main concerns, so a more rigorous approach is now to be preferred.

In similar vein, Feldman claims that children are craftsmen who naturally want to be good at something, to feel competent. However like Gardner, he contends that talent is field specific; people are not talented in a general sense but talented for something, be it music, mathematics or interpersonal relationships. It follows that competence depends on discovering this niche in which one's talent lies. Feldman therefore advocates a two-stage approach to education. During the first, many activities should be explored with the emphasis placed on having fun rather than taking them seriously or improving. Clearly a hothouse approach is implied. However once children discover something that they enjoy and can do well, they will want to improve, so a more rigorous approach is called for that features more demanding instruction and commitment. In support, Bloom found that high achievers in a variety of fields went through just such a sequence of events while developing their talents.

Activities for Gifted Students That Enhance Math Understanding

Cynthia Ballheim
Calgary Catholic Board of Education

Mathematics should be applied to everyday situations and these connections must be highlighted for students. What follows from this is the understanding that mathematics needs to be learned, discovered, and experienced in a variety of ways and in many different contexts.

Tools used to achieve this end include calculators, manipulatives, diagrams, posters, analogies, stories, videos, microcomputers, dramatizations, poems, debate, and interactive teaching strategies. Not a spectator sport, students need to be able to do mathematics. They should be comfortable in both large and small group settings and be able to communicate mathematics effectively as individuals and as contributing members of a classroom community.

Students need to be challenged, not frightened, by the rigor of the subject matter. In essence, the outcome should be students who are confident independent, creative problem solvers. Key initiatives to achieve these ends include increased parental involvement, increased emphasis on the written and oral communication of mathematics, and cooperative learning experiences in all units.

The mathematical activities listed below move beyond the traditional classroom approach. The major focus of all of these activities is to sell students on math, to have them buy into their own mathematics education, to create favourable dispositions toward the study of math, and to generally make the mathematics classroom a fun and challenging place to be.

MATHEMATICS AS A VERB AS WELL AS A NOUN.

WORTHWHILE MATHEMATICAL TASKS.

PREPARATION FOR THE 21ST CENTURY AND IMPLICATIONS FOR ASSESSMENT.

PROMPTS.

OPEN-ENDED QUESTIONS.

NEWSPAPER MATH.

DISCOVERY LESSONS.

STORY PROBLEMS.

THE HISTORICAL CONNECTION.

MATH IN CONTEXT.

STUDENT SELF-REPORTS.

THE IMPORTANCE OF REVIEW.

LANGUAGE AND MATH.

OUTCOME BASED PERFORMANCE OBJECTIVES.

Narrative Knowledge of Talented Children

Lynn Davis
The University of Calgary

Results of a study which examined the differences in narrative productions of verbally talented children aged 4 and 6 were presented. Oral narratives that were produced in response to five task prompts were analyzed for plot structure, semantic linkages and descriptive detail.

It appears that verbally talented children follow a developmental progression in narrative from the production of scripts, to problem-resolution structures, to the inclusion of extra problem-resolution events or the addition of a failed attempt, and finally to the provision of problem-resolution structures that are in an integrated story structure with a minor, major or complicating event. To facilitate a further examination of the developmental nature of the narratives, a model was developed which extended McKeough's (1992) analysis of plot to include the dimensions of semantic linkage structures and elaborative detail. Upon examination of the narratives it was discovered that there was a significant difference in the level of production of narrative between the ages of 4 and 6. However, although the stories of verbally talented children followed the general progression of narrative development they were more complex and advanced than expected.

Also of interest was the distinction that was discovered between personal prompts, which had a substantial affective component attached to them, and non personal prompts, which did not have an affective

component. The prompts that incorporated an affective, emotional component produced stories that were at a lower developmental level than expected. It appears that emotion overwhelms or overshadows narrative structure and competes for available working memory. Hence the generation of narratives in response to personal prompts was below the expected level.

In conclusion, the narratives of verbally talented children develop in a progressive manner that involves the application of plot structures, linkage structure and detail. Narrative production is also dependent on the type of story, and associated emotional components, as well as the development and availability of working memory.

Narrative Development of Average and Exceptional Writers

Randy Genereux
Mount Royal College

Narrative understanding has recently been identified as a primary mode of human thought. For example, Bruner (1990) has proposed that narrative thought is one of two basic modes of cognitive processing, the other being logico-mathematical processing. Narratives and narrative thought inform us about the nature, causes and consequences of human actions and interactions, and as such may well underlie social knowledge (Case & McKeough, 1990; McKeough, 1992a; 1992b). Understanding narrative thought and its development is thus an important undertaking.

The purpose of the present study was to map out various strands of narrative development in late childhood and adolescence. Both exceptional and average writers were studied in order a) to determine the upper limits as well as the typical level of narrative development at different ages and b) to further our understanding of exceptionality within the narrative domain. The research questions of primary interest were a) whether a developmental progression in the structural complexity of narrative thought occurs, as suggested by Case's (1992) neo-Piagetian theory of cognitive development and b) whether an accompanying progression occurs in social understanding of human action and experience, as suggested by McKeough's (1992a) previous research.

Method

Participants

Participants were 151 students (87 females and 64 males) drawn from six schools in the Calgary Catholic School System. There were 40 Grade Four/Five

students (mean age = 10 years, 4 months), 40 Grade Seven students (mean age = 12 years, 9 months), 35 Grade Nine students (mean age = 14 years, 8 months), and 36 Grade Twelve students (mean age = 17 years, 9 months). Participants were drawn from lists of average and exceptional story writers generated by classroom teachers. The mean percentile ranking on standardized verbal aptitude tests for the average writers (N = 73) was 58.0 and for the exceptional writers (N = 78) it was 84.3.

Procedure

Participants completed several tasks during a series of small group sessions over a period of two weeks. Each student wrote a story with a flashback in it, read and interpreted a story containing multiple plot lines, completed a questionnaire on attitudes toward writing, reported on out-of school narrative activities, and completed other verbal and social tasks.

Results

Analyses completed thus far reveal clear developmental trends in narrative thought consistent with Case's (1992) neo-Piagetian theory of intellectual development. Between ages 10 and 12 a jump occurs in children's ability to comprehend and compose narratives with complex structure (e.g., stories with multiple plot lines or stories containing flashbacks). From ages 12 to 18 students become more and more adept at coordinating and integrating multiple layers of structure and meaning in narratives. In addition to revealing structural development, the results indicate a clear developmental trend in students' narrative understanding of what motivates human action. A marked change occurs between ages 10 and 12 from a) an intentional understanding of human action in terms of immediate feelings, thoughts and goals to b) an interpretive understanding of human action and immediate mental states in terms of personal history and long-standing

psychological traits. From ages 12 to 18 students develop a richer understanding of the distal and contextual/cultural factors that influence human action.

In terms of differences between exceptional and average story writers, the following patterns have emerged thus far. Students identified as exceptional story writers by their teachers displayed significantly higher verbal aptitude in terms of existing standardized test scores and in terms of the two verbal tasks administered in the study, the Similarities subscale of the Wechsler Intelligence Scales and the FAS verbal fluency task. In terms of attitudes toward writing in general, the exceptional writers reported having slightly more positive attitudes than average writers (mean difference of .24 on a five-point scale, $p < .02$). In terms of frequency of engaging in narrative activities outside of school, the two groups differed significantly on three of thirteen activities examined. The exceptional writers reported reading fictional stories and writing poems more often than the average writers, whereas the average writers reported watching non-fictional stories on TV more often than the exceptional writers. In terms of structural complexity of narrative thought and composition, the exceptional writers tended to score somewhat but not dramatically higher than the average writers. Determining whether the two groups differ in terms of social understanding awaits further analysis.

Discussion

The results of this study provide support for the usefulness of Case's (1992) neo-Piagetian theory of cognitive development for shedding light on narrative development. The results also support McKeough's (1991; 1992a) proposal that a central aspect of narrative development is enhanced social understanding.

This study has important educational implications as well. By providing a map of narrative development in both average and exceptional writers, it allows us

to better understand the level and nature of stories that students of different ages and abilities can be expected to handle. It also allows us to more clearly specify potential goals of Language Arts instruction, in terms of moving students up the ladder of narrative developmental. Furthermore, the finding of a link between social and narrative development suggests the exciting prospect of using narrative instruction to enhance the general social, psychological, and cultural understanding of our students.

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"Talk" Among A Community Of Learners

Anne Green
Mossleigh Demonstration School

Advancing Excellence, is the theme of our 5th annual Sage Conference. I stopped to ponder about excellence as my computer and I fashioned this presentation. What is excellence? Hov do we advance excellence?

I have spent many years observing young children entering their classroom each day. There is a telepathic energy that flovs as experiences are intervoven with imagination. Children come to know excellence personally as they discover ways to build on to their ideas as well as on to the ideas of others as they talk.

I hope to demonstrate hov young children, in the environment of a Community of Learners, advance excellence for themselves as well as for their peers as they "Talk". The Community of Learners is a vehicle with a hidden structure that is lived by the children. It supports the uniqueness of each learner as they continue from their home environment into the school environment. Everyone's "voice" is needed and valued. The spin off for the more able children is measureless.

The hidden structure is not rules on the wall but practical communication skills which are lived throughout the learning. The children are encouraged to use their space wisely, to avoid stepping on one another's vords, to build onto each other's ideas, to be cognizant of meeting the different learning styles of their peers by using clear speech , mime, props, illustrations and/or diagrams at the blackboard to put forth ideas in a meaningful way.

The Community of Learners is comprised of students, teachers, parents and interested community people. Everyone becomes responsible to ensure a daily nurturing environment. The concept of a Community of Learners can happen in all areas of the curriculum. As students vrite, read, and listen to learn they "talk". This occurs as they bridge experiences, imagination and hypothesis with nev concepts.

Students involved in the Community of Learners demonstrate their problem solving skills, develop a growing understanding of the specialness of their peers, stretch to use language as a tool to communicate in real life situations created by themselves not contrived by an adult. As they comment, question and put forth hypothesis they naturally reach for books, teachers, and parents to be facilitators for their self-directed learning.

Teacher's and parents enjoy their role as a facilitator and a guide. They begin to keep supplies of articles and good literature tucked under their arm and in every available corner. The direction the "Talk" will take is not predictable. An adult's focus changes from that of dispensing knovledge to asking questions that will help children help themselves to advance their excellence. They are energized to read and talk, to listen and talk and to vrite and talk while finding out about the learning process.

Please come with me to join a community of first grade learners in action. Discover your listening encouraging you to see possibilities without end as you view the world through the "talk" of young children. Let yourself gently into the circle of learning with no closure. (See figure 1)

A COMMUNITY OF LEARNERS figure 1

The Space Egg was written by a young lady during the bear theme. She constructed miniature dioramas as she wove her experience, passions for dogs, and imagination with non-fiction. During the writing of the story she shared her chapters with peers which resulted in involved conversation. The published copy is as follows. The conventionally typed copy (figure 2) and the original (figure 3)

JANE'S STORY figure 2

January 15/91

The Space Egg

Once there was a space egg.
All of a sudden the space egg began to hatch!
Out came a space puppy.
The puppy began to play.

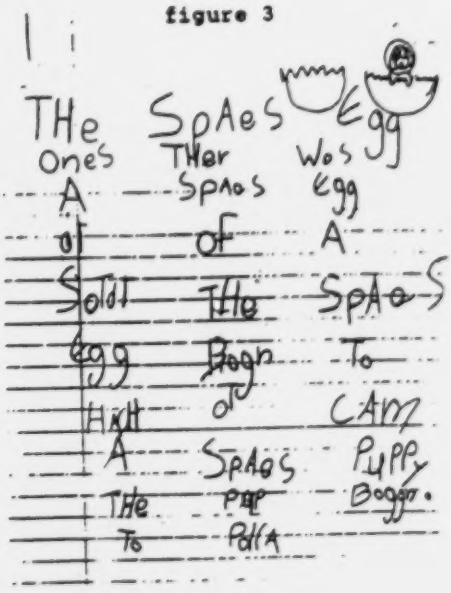
CHAPTER 2 The Puppies First Day on the Moon.

The puppy began to take a walk around the moon.
The moon was pretty fun!.....but he fell into a hole!!

CHAPTER 3 The Hole

The puppy called for help with his WOOFY-WOOF-WOOF!
The star bears came and got the puppy.

figure 3



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The morning arrived when Jane, as author of the morning passed copies of her story to all of her peers. After giving everyone time to read and illustrate her story she entertained questions and comments. The dialogue, transcribed below is open and receptive.. The children are demonstrating what Gusdorf recommends,

> "To be open to the speech of others is to grasp it in its best sense, continually striving not to reduce it to the common denominator of banality, but to find in it something original. By doing this, moreover, by helping the other to use his own voice, one will stimulate him to discover his innermost need." (P 125)

Transcription of the "Talk" follows:

Joe: (waving his hand)

Jane: Yes Joe.

Joe: I don't understand the part when the dog fell down the hole?

Jane: Well, the puppy was walking along and he thought the crater was just a big hill and when he got up he fell in the hole.

Donald: What's a crate?

Jane: It is a crater. (emphasizing the "or") Actually it's just a hole in the moon. (Jane went to the black board and sketched a crater.) Does that help Donald?

Donald: (Nodded as he added to his illustrations on his copy of Jane's story.)

Darren: What are star bears?

Jane: Oh, you lie on your back and look at the stars and see the dippers.

Darren; Oh, you imagine the stars into things.

Chelsea: uh... when he went for a walk?

Jane: (nodding her head) After he hatched, he went on a walk.

Chelsea: Is he dead or hurt or something?

Jane: The bears, made out of stars saved him...the big dipper and the little dipper.

Chelsea: How did he breath on the moon?

Jane: (held up her dravings and explained) He has a bubble of air over his head.

The whole class: (were busy adding the bubble to their illustrations or I call it 'imaging'.)

Shawn: Do you really got a dog?

Jane: Yea, and his name is PUP.

The conversation continued about the children's pet dogs. I read some Indian legends about hov the bears got up into the sky. We looked at some night sky books and everyone planned to look for the dippers before they vent to bed that evening. The origin of the vord "dipper" and what a dipper vas used for before the days of running vater vas discussed. Space books revealed some close up pictures of the moon vith some interesting craters.

Barnes shares "To become meaningful a curriculum has to be enacted by pupils as vell as teachers, all of vhom have their private lives outside school. By 'enact' I mean come together in a meaningful communication - talk, vrite, read books, collaborate, become angry vith one another, learn vhat to say and do, and hov to interpret vhat others say and do." (P 14)

'Speaking is the essence of being human.' The conversation as transcribed above happened during January of the children's first year in school. We vere reaping the results of the hidden structure vhich acted as a rudder for communication. Each child is personally involved in the community. Gusdorf vrites,

> "The affirmation of individuality begins vhen it has stepped back, vhen speech confers on it the double capacity of evocation of self and invocation of others."

In the nurturing environment of a Community of Learners theory is translated into practice so that advancing excellence personally can become a reality for our more able children,in the regular classroom.

submitted by Anne Green
Mossleigh Demonstration School
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The Charter School • Is It A Plan?

Don Green
The University of Calgary

The concept of a Charter School has some folks busy planning for a school for the Gifted in their community. Although the regulations from Alberta Education will not be out until some time in November , there is some reason for doubt as to whether such a school would be approved. Lets look at what we know to this point in time.

First we know that the intention of the Charter School concept is to be a public school funded by public funds, therefore limiting access to the facility is not possible. Secondly we know that the school must have a focus, a vision, a mission that can not be found in the the school down the street. Thirdly the school is operated by a group of parents and community members without having involvement with the School Board. Fourthly the funds from Alberta Education go directly to the School with control coming from the organizational group, however the organizational group is still accountable to the School Board or the Minister of Education depending where the approval came from. The main focus of any Charter School must be the enhancement of Public Education.

If we assume that the above will be the regulations we then have to work within these restrictions. So what might our school look like? Is it possible to create a Charter School, under these circumstances, which will meet the needs of our Gifted or more able students? I believe that it is, if we establish our Objectives, Process and Outcomes by carefully weaving theory with practice.

Let me propose a possible purpose, a set of objectives and outline the process and outcomes which I think will in fact make a difference for those more able students attending such a school.

PURPOSE: Students will have the opportunity to progress in an Inclusive Education environment that will encourage problem-solving and stretch the students thinking abilities beyond simple memory and comprehension skills. We recognize that each student has individual strengths and needs and that Differentiation can maximize the development of these talents.

OBJECTIVES:
To maximize the learning of each individual student.
To value the learning style of individual students and increase their knowledge of how they learn.
To assist teachers in developing their ability to differentiate instruction.
To use the information provided by research in student development and in how learning takes place.
To provide opportunities for teachers to increase their knowledge about the teaching/learning process.
To encourage collaboration between the School and Post Secondary Institutions.
To provide the opportunity for parents to become involved in the education of their children.
To provide parents the opportunity to be partners in education.
To provide parents the opportunity to share in the hiring of staff.
To provide the opportunity for various stake holder groups in the community to become involved in the education system.

To provide the opportunity for staff, parents and community members to read current literature and attend on site discussions about the teaching/learning process.
To organize a joint committee for budget planning and spending control.

PROCESS: Facilitate students making decisions about their learning and being involved in the process of schooling. Students will have the opportunity to investigate various teaching strategies which will enhance Inclusive Education through differentiation. These strategies will include the use of Teaching Styles, Themes using Blooms Taxonomy, the Writing Process and Community of Learners.

Provide teachers with the opportunity to; investigate current research, values and pedagogical issues concerning the paradigm shift (Inclusive Education) in Education. i.e.Lecture series organized by the Centre for Gifted Education.
To carry out a professional development plan, on site, with parents and teachers being actively involved.
To assist teachers and parents with the opportunity to be involved in workshops concerning the teaching/ learning process.

Encourage parents to share in their area of interest and/or expertise. The parent comes to understand the academic advancement of their child through communication with the school, their observations, anecdotal report cards and student led interviews. A volunteer program will be established to provide training for parents and community members such that the needs of students can be better met. A professional library will be established which will develop an understanding of differentiation and how it supports Inclusive Education. These materials will be available to parents and community members on a sign out basis.

OUTCOMES: Students will develop individual strengths, high self esteem and academic skills according to their natural ability.
Students will exhibit appropriate problem-solving skills.
Students will demonstrate independence and exhibit the ability to self evaluate.
A variety of teaching techniques, which will result in a high level of student engagement, will be observable.
Teacher enthusiasm, which is necessary for success in any model, will be observable.
Parents will be directly involved with the education of their children.
Parents, teachers and students will exhibit a high degree of commitment to the program because of the ownership of the program.
Involvement of members of the community at large will be observable.
The school will operate within a predetermined budget and will involve parents in any changes to the original financial plan.

CONDITIONS: Depending on the location and the structure of the organizing committee the following must be considered.

Length of Charter in years.
How evaluation will take place.
Who sits on the organization committee.
How sub committees are formed an what they do.

Could a Charter School enhance education for our more able students? I think it could, provided it was done correctly and those involved were prepared to do the necessary work. The principal of such a school must have a high level of energy and be a person with excellent skills in leadership.

The Quest, it seems, is to challenge those students who are more able while not frustrating those who are less able. Our task as parents and educators is to enhance public education, thus Education becomes Gifted.

Activities and Materials Teachers Can Use With Bright Students and Their Peers in the Regular Classroom

Lannie S. Kanevsky
Simon Fraser University

Teachers with mixed-ability classes face the constant challenge of accommodating the needs of each student in each lesson. This means an endless search for instructional strategies that provide appropriate levels of challenge for the entire class. Two kinds of activities that have the potential to inspire the learning of children with a range of levels of intellectual ability are open-ended activities and those that require students to provide evidence of their reasoning (Maker, 1982; readers are encouraged to refer to this book for a more extensive discussion and more examples). Here you'll find definitions, guidelines and materials to support the implementation of activities of these types.

Open-Ended Activities

Open-ended learning activities include more open than closed questions and tasks. Open-ended activities have no single, predetermined right answer. Closed questions have one right answer, often a "yes" or "no". Open questions have many paths to their answers or solutions. They are provocative and stimulate divergent thinking about a topic. They also encourage responses from more than one learner. Although open-ended activities are suitable for most non-gifted learners, highly able learners who demonstrate certain behaviors need them more than their peers who do not. These characteristics include:

- an exceptionally keen sense of humour;
- an intense desire to probe and explore events, objects, ideas, feelings, sounds and symbols;
- a passion for problem solving;
- an extraordinary sensitivity to experiences, feelings and other people;
- a terrific imagination;
- an ability to learn sophisticated understandings and skills quickly and easily.

Simple, small changes in a teacher's language and behavior can provide students with a greater open-endedness in any task that has more than one solution or answer. Instead of asking for "the" answer, ask for "an" answer. Respond with equivalent enthusiasm to all student responses to open

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Portions of this chapter will appear in , "Applying The Principles In An Elementary School Classroom", in *Curriculum Development for the Gifted (2nd ed.)* (in press); edited by C. J. Maker & A. Nielson, published by Pro-Ed., Austin, TX.

questions. When asking the class questions, avoid any question that can be answered with yes or no. A teacher can be a real risk-taker by engaging students in their efforts to change their questioning habits. The students can keep a daily tally on the chalkboard for questions the teacher asks that are closed with the goal of reducing the number from day-to-day, week-to-week.

Relatively closed teacher-centred questioning sessions often take on the feeling of a "fishing expedition". The teacher knows the answers needed to the questions and the students "fish" around until they get it. More open questioning sessions are characterized by language like, "What are some other ways...?", "What would happen if...?", and "How would _____ have been different if _____?" In these sessions, students are more likely to question and answer each other as well so the students feel they have more control over the direction of the discussion and the learning.

Students need to be introduced to open-ended activities in a learning environment that feels safe and supportive for risk-taking and creative responses. Some students, particularly very young gifted students, can find open-ended questions and activities overwhelming because the number of responses they can generate feels unmanageable and they may not know how to determine which is best or what to do with all of them. Learning to evaluate, prioritize and manage all of those ideas are coping skills many students need to learn before they can gain the full benefits of open-ended activities. If not, a task intended to inspire them may actually create despair.

Evidence of Reasoning

In activities that require them to provide evidence of their reasoning, students must explain the thinking that led them to their conclusions. To do this they must access higher levels of thinking and metacognition. Activities that require students to provide evidence of their reasoning are particularly appropriate for bright students who demonstrate the behaviors listed below when they are engaged in challenging activities in their area of strength (Kanevsky, Maker, Nielson & Rogers, 1994):

- an extraordinary ability to communicate meanings or emotions through words, actions, symbols, sounds or media;
- a desire to probe and explore events, objects, ideas, feelings, sounds and symbols;
- outstanding ability to reason and weigh alternatives;
- a tremendous memory capacity for information and skills.

Students with these characteristics have the ability to think deeply. They can learn to share descriptions of their thinking and how they monitor their thinking with their classmates. The basic requirement of these tasks is that the task must all be sufficiently challenging to require all students in the class to THINK. If they are not sufficiently difficult, no reasoning will occur, so students will have nothing to explain.

When teachers ask students to explain their reasoning after completing a challenging task, students get the message that the process of thinking is valued, as well as the product. A few guidelines for this debriefing are offered to assist teachers efforts to plan lessons of this nature. One third of the time scheduled for the lesson should be devoted to this debriefing process. With the guidance and support of the teacher, all class members can view each other's thinking; compare and evaluate their strengths and weaknesses. This provides a rich context for discussions of individual differences based on alternate paths to worthy solutions. As a result of describing their thinking, all class members will have opportunities to learn different reasoning processes from other peers. This may enable them to "try it on" in the future. Students should be encouraged to evaluate the process and products of their own thinking and others' thinking. Teachers also gain a window on students' thinking and feelings.

With young children, Blank (1975) found that questions beginning with "which" and "what" provided richer insights than "how" and "why" questions. Often teachers ask for evidence of reasoning when they need to understand where and how a student's thinking has faltered or failed. It is also valuable to ask students to explain their thinking when it is complete and results in a good answer or solution.

Right or wrong, some students will have nothing to report no matter how you ask. It is not wise to pressure a student to describe thinking when you suspect an intuitive leap has been made. They honestly just knew it somehow. Forcing a child to provide an explanation for an intuitive leap results in frustration, not better thinking. As the saying goes, "If it ain't broke, don't fix it". Also, be sensitive to cultural and other individual differences in children's willingness and ability to share their thinking. Some children have never heard or experienced this type of activity before, or they are uncomfortable speaking about internal processes. They deserve time to learn in a nurturing environment.

Annotated Materials List

A few examples of materials teachers might use to offer students open-ended activities that provide opportunities for debriefing include the following:

Math: Aftermath (Books I-IV) (by D. Seymour, V. Holberg, R. Heller, B., Larson, & M. Laycock, Creative Publications, 1975) offers a wide variety of math challenges that promote the development of mathematical reasoning and problem-solving skills and reinforce basic math skills in a challenging, fun, open manner. The authors suggest they are appropriate for students in grades 4-9, however mathematically passionate students can enjoy them much earlier, even in early primary grades.

Creative Writing or Story-Telling: Chris Van Allsburg's, *The Mysteries of Harris Burdick* inspires students to generate fiction to account for an event captured in his outstanding illustrations. Each mystery is composed of a title, one sentence and a drawing, to tease the mind. Strong and weak story-tellers of all ages find the urge to explain the event irresistible. What caused it? What happened as a result of it? The book lends itself to individual, group or whole-class story-telling.

Drawing (and Storytelling): *The Anti-Coloring Books* (I, II, & III; by Susan Striker, published by Holt, Rinehart & Winston), offer students unfinished frames subtitled with a question to tempt imaginations. For example, one frame shows a diver swimming toward the ocean floor and the question posed is: "You are a scuba diver and you have just made the most exciting underwater discovery. What have you found?"

Logic, Inventions and Strategy Games: *Brain Boosters* and *More Brain Boosters*, by S. Martin and D. McMillan (published by Monday Morning Books, 1986 and 1988 respectively) challenge children with a variety of problem solving, construction and game activities in math and science.

Social Studies: In *Teaching Strategies for the Social Studies* (Longman Publishers, 1990), James Banks, provides teachers with many ways to engage students in inquiry and decision-making. It is actually a textbook, but its loaded with phenomenal lesson ideas.

Science: *The Exploratorium Science Snackbook*, edited by P. Murphy and D. Rathjen (published by the Exploratorium Institute, 1991). This book contains a broad assortment of hands-on science-oriented lesson plans with broad horizons and high ceilings to accommodate young minds determined to understand natural phenomena.

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Perfectionism and Giftedness: Examining the Connection

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Purpose

The purpose of this paper is to discuss current research regarding the construct of perfectionism, its measurement, its linkage with intellectual giftedness, and strategies for overcoming its negative effects.

The Construct of Perfectionism

In the past decade, clinicians have focused on the debilitating effects of perfectionism or perfectionistic thinking. For example, perfectionism has been identified as a possible cause of abdominal pain in children, alcoholism, anorexia, chronic olfactory paranoid syndromes, depression in children and adults, dysmorphophobia, erectile dysfunction, irritable bowel syndrome, Munchausen syndrome, obsessive compulsive personality disorders, Type A coronary-prone behavior, ulcerative colitis, and writer's block (Pacht, 1984).

One of the difficulties in describing the construct of perfectionism is recognizing the multiple uses that occur in the literature. There is a fine line between striving to reach high standards of excellence and feeling self-defeated through the inability to reach unreasonable expectations. Some writers, deal with this dichotomy by contrasting two types of perfectionism. Bransky, Jenkins-Friedman, and Murphy (1987) distinguish between enabling perfectionism that empowers individuals and disabling perfectionism that cripples individuals. Hamachek (1978) distinguishes between normal and neurotic perfectionism. Other writers (Barrow & More, 1983; Burns, 1980; Pacht, 1984) use perfectionism to refer to the negative aspects of the syndrome.

Barrow and Moore (1983) prefer the term perfectionistic thinking to perfectionism. Perfectionistic thinking is viewed as a cognitive pattern that many people use at various times to varying degrees. The word perfectionism implies a trait that an individual either has or doesn't have. Barrow & Moore (1983)have identified common elements of perfectionistic thinking. Frequently, dichotomous (all-or-none) thinking is present. One's efforts are either perfect or worthless. Another element of perfectionistic thinking is viewing goals as necessities rather outcomes worth striving for. Desires (Wants) are transformed into demands (Musts). Often, perfectionistic thinking leads to focusing on unmet goals and challenges rather than savoring successes. Attention is placed on hurdles ahead rather than recognizing barriers cleared. Perfectionistic thinking leads to compulsiveness when less-than-perfect performance is attributed to permitting imperfections.

Measurement of Perfectionism

Scales to measure perfectionism have evolved from viewed perfectionism as a unidimensional construct to viewing perfectionism as a multidimensional construct. There are currently two instruments, both called the *Multidimensional Perfectionism Scale*, that assess the multidimensional

aspects of perfectionism. These instruments which have different conceptions of perfectionism were developed by Frost, Marten, Lahart, and Rosenblate (1990) and by Hewitt and Flett (1991). Frost et al. (1990) have developed a 35-item instrument that assesses six dimensions of perfectionism (concern over mistakes, personal standards, parental expectations, parental criticism, doubts about action, and organization. Hewitt and Flett (1991) developed a 45-item instrument that assesses three dimensions related to perfectionism (Self-oriented Perfectionism that focuses on excessively high self standards; Socially-Prescribed Perfectionism that addresses perceptions of standards and expectations set by others; and Other-Oriented Perfectionism that examines an individual's expectations for others). Both instruments have been found to demonstrate adequate psychometric properties. Frost, Heimberg, Holt, Mattia, and Neubauer (1993) administered these two instruments, among others, to a large sample of undergraduates. They identified two factors *Maladaptive Evaluation Concerns* and *Positive Striving* that accounted for 67% of the variance on the two instruments.

Perfectionism and Giftedness

Among educators of the gifted the link between giftedness and perfectionism is clearly established. The tendency toward perfectionism is an item on the most widely-used teacher rating scale for the identification of superior students (Renzulli, Smith, White, Callahan, & Hartman, 1976). Dealing with perfectionism among the gifted is often cited as one of the counseling needs of the gifted (Kerr, 1991; Silverman, 1993). Typically educators concerned with gifted children are concerned about two negative impacts of perfectionism: underachievement and emotional turmoil. In terms of underachievement, Whitmore (1980) reported that perfectionistic tendencies makes some gifted students vulnerable for underachievement because they do not submit work unless it is perfect. In terms of emotional stress, perfectionism is seen to cause feelings of worthlessness and depression when gifted individuals fail to live up to unrealistic expectations. DeLisle (1986, 1990) has provided anecdotal evidence that perfectionism places some gifted students at-risk for suicide.

Coping with Perfectionism

Several things can be done to help individuals to effectively cope with perfectionism tendencies. First, individuals need to recognize that 80% of the reward structure comes from 20% of one's activities. This realization will help individuals concentrate on the few things that require extra effort. Second, individuals also need to develop the capacity for constructive failure by recognizing that present performance, even if imperfect, sets the tone for future improvement. Third, individuals need to develop self-concepts separate from their products. They need to understand that they have inherent dignity and self-worth which is unconditional. Fourth, they should recognize that the commitment to excellence is a lifelong struggle and they need to view present circumstances as a step toward the future. Fifth, individuals with perfectionistic tendencies need to set realistic goals. Finally, perfectionistic individuals need to find avocational interests and pursuits that can bring joy.

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Physiological Reactivity Levels of Normative, Gifted, and Gifted Students With Behaviour Problems: A Stress Test Simulation

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Introduction

Stress has become a part of the modern era. Over the years, stress as a positive force and as a negative irritant, has systematically worked its way into the very fibre of the human condition. Apparently, no individual or environment is completely stress-free (Fimian, Fastenau, Tashner & Cross, 1989).

Gifted students are not immune to the psychological problems experienced by other populations (Galbraith, 1983; Guetzloe, 1988; Lajoie & Shore, 1981; Seeley, 1984; Webb, Meckstroth & Tolan, 1982; Weiss, 1990; Yewchuk & Jobagy, 1991). In fact, some authors suggest that the profoundly gifted may be among those most likely to experience social maladjustment (Farrell, 1989; Kirschenbaum, 1989; Roedell, 1986). The most extreme form of maladjustment, suicide, is also prevalent among the gifted (Delisle, 1986; Farrell, 1989; Guetzloe, 1988; Hayes & Sloat, 1990; Leroux, 1986; Lester, 1991; Seibel & Murray, 1988; Weiss, 1990; Wolfle, 1988). "While the literature supports the characterization of superior youngsters as basically well-adjusted people...it also suggests that these youngsters are subjected to the same stresses and anxieties that all people face, as well as some sources of stress related to their giftedness" (Ford, 1989, p.131).

Purpose

This study was part of a larger project designed to compare brain activity and behavior patterns in junior/intermediate students who were normative, gifted, and gifted with behavior problems. In the larger project, participants were asked to respond to three, separate, stress test situations. These included: 1) the Quick Neurological Screening Test, 2) the Halstead Category Test, and 3) the Rosenweig Picture Frustration Study. Electromyographic readings of brain reactivity were recorded for each test. In addition, the Davicon Medac/3 System was used to measure the physiological responses of each participant throughout the various test situations.

For the purposes of this paper, only the physiological responses to the Quick Neurological Screening Test will be discussed. Specifically, the purpose of this paper, is to examine the physiological reactions of junior/intermediate students who are normative, gifted, and gifted with behavior problems when placed in a simulated stress test situation.

Method

Sample

Six students, ages 10-13, participated in the study. Two of the pupils were identified as gifted (G), two were identified as gifted with behavior problems (GB), and two belonged to the normative group. Five of the students were selected from elementary schools in the Ottawa-Carleton region.

One student was selected from an elementary school in New York. The selection of the candidates was made by educators using the terms of reference as defined by the study. Table 1 shows the age, sex, and grade level of each participant.

Table 1

Descriptive Characteristics of the Sample Population

Group	Age	Sex	Grade
N	11	F	5
N	10	M	5
G	12	F	7
G	13	M	8
GB	12	M	7
GB	13	M	7

Procedure

All subjects were treated individually in a sound attentuated room. Upon arrival, each participant was given a brief, informal orientation to the research site. During the orientation session, the students and their parents were encouraged to examine the various pieces of equipment positioned around the room and ask any questions about the experimental procedures to follow.

After the orientation session, each participant was seated in a comfortable chair facing a computer monitor. A number of sensors, designed to monitor eight physiological phenomena were attached to the student's upper body. These included:

1) a photoplethysmography sensor, a rectangular device mounted on a velcro strip, attached to the medial phalanx of the third finger of the non-dominant hand to monitor five distinct measurements of cardiovascular response

2) Bechman silver-silver chloride electrodes and 0.5% KCL in 2% agar-agar as electrolyte attached with velcro straps to the medial phalanges of the first and second fingers to monitor electrodermal activity (skin conductivity)

3) electrodes attached with a Davicon Triple Stix, a three-piece dry disposable (Davicon P/N AE-178), using snap heads (Davicon P/N AE-128) to the forearm of the non-dominant hand and to the forehead to monitor electromyographic muscle activity

Once the sensors were in place, the Davicon Medac/3 System was activated so that the readings received from the various sensors could be calibrated throughout the simulated stress test situation. The computer monitor, which delivered the Quick Neurological Screening Test, was also activated at this time.

There were three parts to the test. First, there was a relaxation period where the students were asked to close their eyes and relax. Second, there was the test situation where the students were asked to read and verbally answer three questions involving language, mathematical computation, and general knowledge within a time frame of three to five seconds per question. Third, there was a relaxation period where the students were asked, once again, to close their eyes and relax. The readings received from the various sensors were electronically calculated for each part of the test by the Davicon Medac/3 System. These calculations measured:

1) the peripheral vasoconstriction change index (PCI) in relative units

2) heart rate (HR) in beats/minute

3) skin conductivity (SC) in micromhos

4) electromyographic muscle activity (EMG-1) at site 1-the forearm, in microvolts

5) electromyographic muscle activity (EMG-2) at site 2-the forehead, in microvolts

6) pulse height (PH) in relative units

7) inter beat interval of the cardiac cycle (IBI) in seconds

8) temperature in degrees Fahrenheit

A printout of the test results was made for each student (Appendix A)[1]. When the test results showed values of 0.00 (Appendix B), the test was readministered after a 45 minute time period had elapsed. In this study, it was necessary to readminister the Quick Neurological Screening Test to all four male participants (1 normative, 1 gifted, and 2 gifted with behavior problems). The test results collected from the retest activities also showed values of 0.00.

Analysis of Data

As noted in the previous section of this paper, over half of the sample population, representing each of the three groups identified for the study, received values of 0.00. Because of these scores, many of the statistical procedures often used to compare multiple variables and groups could not be used. Instead, a bar graph was designed for each of the eight physiological conditions monitored during the three stages (relaxation-test-relaxation) of the Quick Neurological Screening Test (Appendix C).

About the Meaning of 0.00

To fully comprehend the meaning of 0.00 used here, one must understand the way that the Medac/3 System manages the data which has been received from the various sensors. The Medac/3 System processes information in one of two ways. If the data which has been received from a sensor falls within an acceptable range of intensity, as determined by the medical profession, then the system registers that numerical amount. If, however, the data does not fall within the acceptable range of intensity, as determined by the medical profession, then the system translates the original amount into a value of 0.00. From a medical perspective, then, values of 0.00 mean that the physiological

phenomenon under study has reached a level of intensity which, if maintained, would lead the organism into a coma. If allowed to continue unchecked, such levels of intensity could result in death.

In this study, values of 0.00 are represented graphically on Figures 1-8 by a darkened area of uniform size positioned at the top of the numerical scale. This area is called 'the area of concern'. In Figures 1-5, the area of concern is positioned on top of an ascending scale because increasing values of PCI, HR, SC, EMG-1, and EMG-2 may be interpreted as increased physiological arousal. In Figures 6-8, the area of concern is positioned on top of a descending scale because decreasing values of PH, IBI, and temperature correspond to greater physiological arousal. In all cases, values of 0.00 have been graphically represented in the area of concern. Such scores suggest intense physiological reactivity, which, if continued, could be hazardous to the well-being of the organism.

Discussion

An examination of the data seems to suggest at least three things. First, that males physiologically react more intensely to a simulated stress test situation than do females. Of the many relaxation-stress-relaxation conditions selected for this study, the males scored higher on thirteen of the possible twenty-two conditions. In addition, significant differences in the intensity of reaction were discovered between male and female participants. Whereas the reactivity levels of the male population had to be registered in the area of concern thirteen times, no such recording was necessary for the female participants. Although all of the gifted males reacted intensely to the stress stimuli, the gifted female did not. This evidence suggests that extreme levels of reactivity may be related to issues of gender rather than to issues of ability. This finding does not coincide with the work of Ferguson (1981) on the sensitivity levels of gifted students.

Second, that males are often unable to recover physiologically from intense levels of reactivity, even after the stress stimuli has been removed. Of the twenty-two possible conditions selected for this study, eight were designed as rest periods. These rest periods occurred immediately after the stress test situation. During the rest period the stress stimuli was removed and students were asked to close their eyes, relax, and focus on some gentle mood-enhancing music. Theoretically, this relaxation session is a time when the reactivity levels experienced under stress should begin to moderate in intensity. This recovery pattern was evident in the scores of the female participants most of the time. However, the scores of the male participants did not show signs of recovery for three of the four male subjects. The data suggest that males seem to physiologically 'hold onto' their stress for longer periods of time. Since one of the male subjects did show signs of recovery, one has to question why. Although the answer is not clear, one possibility should be considered. This student was the only student allowed to draw for a few minutes before beginning the quick Neurological Screening Test the second time. The decision to alter the research procedure for this subject was made spontaneously. It was based upon a genuine concern for the subject's well- being since the data which was received during the first test experience registered values of 0.00 for all three stages of the test. Since the scores indicated the presence of extreme levels of reactivity, the researchers felt justified in their decision to alter the research conditions. The results were not expected. Although very inconclusive, the nature of the findings might suggest the appropriety of further investigation. Perhaps, there is a unique relationship which exists between the creative arts and stress reduction in junior/intermediate students. The implications of such a relationship, particularly for educators, could be extensive. Torrance (1961) maintains that gifted students, particularly those who have been identified as 'high creatives', have a compulsive need to release their energies through their creative talents. Coincidentally, this male subject had been identified as a high creative by a team of educators in his school.

Third, that the physiological reactions of most of the students involved in this study intensified when asked to verbally answer questions within specific time limits. Since the instructional repertoire of teachers often includes the technique of verbal questioning, one has to wonder about the amount of stress which exists in schools. Perhaps, this technique should be added to the long list of school conditions already cited as problematic for the gifted. Such judgements should be made with caution, however, since the realities which are discovered in a research simulation cannot always be equated with the realities which exist in a school. The exact amount of stress which is created by centering out a student in class to answer a question under the watchful and waiting eyes of peers and teachers remains unknown.

Conclusions and Implications

The purpose of this paper was to examine the physiological reactions of junior/intermediate students who are normative, gifted, and gifted with behavior problems when placed in a simulated stress test situation. since much of the data could not be analyzed statistically, eight bar graphs were created as a basis for comparison.

The data from this study seems to suggest:

1) th physiologically, males react more intensely to a simulated stress test situation than do females

2) that males are often unable to recover physiologically from intense levels of reactivity, even after the stress stimuli has been removed

3) that the physiological reactions of most of the students involved in this study intensified when asked to verbally answer questions within specific time limits

Due to the limited size of this investigation, all conclusions must be considered tentative. Many questions remain. What affects physiological reactivity? How do the reactivity and recovery patterns which exist in youth relate to the patterns found in adulthood? What is the relationship between intense levels of reactivity and the creative arts? How can schools reduce the level of intense physiological reactivity in a classroom?

Some of the findings of this investigation were discovered quite by accident. Often, it is the element of surprise which ignites the curiosity of researchers to explore further. Such has been the experience of the research team who was involved in this pilot project.

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[1] Editor's Note:

Due to length and print requirements, the Appendices and Figures are not reproduced in these Proceedings. To obtain copies of these materials, please contact Dianna Shaffer, Faculty of Education, University of Ottawa, 145 Jean-Jacques Lussier, P.O. Box 450 Station A, Ottawa, ON. K1N 6N5.

Hip Geeks: A Study of the Emerging Identities of Gifted Young People

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Abstract

Self-Concept is multi-faceted. There is mixed research presented on the social and emotional adjustment of gifted adolescents. This paper looks at the perceptions of eight gifted females and six gifted males who range in age from 17-23 as they view their developing identities. Results indicate more differences than similarities between the females and males. Differences emerged in areas such as response to external expectations, dealing with stereotypes, combining achievement and affiliation, and sense of control. Implications for teachers are considered.

Many research studies have described the emotional and social adjustment of gifted adolescents as superior (Terman, 1939; Colangelo & Pfleger, 1978; Coleman & Fults, 1982; Kelly & Colangelo, 1984; Mulcahy, Wilgosh & Peat, 1991). Other studies, however, have portrayed the gifted in terms which suggest they are at risk for psychological and social problems (Dirkes, 1983; Butler-Por, 1987; Whalen & Csikszentmihalyi, 1989; Kerr, 1985). Since it is, indeed, the case that there is as much diversity within the gifted community as there is between gifted and normative youth, it may be best to conceptualize characteristics along a developmental continuum, remembering the suggestion from Alvino (1983) that the self is perpetually making and remaking itself.

Self-perception of agency, enhanced by a positive self-concept and a supportive environment, is important for identity development. In order to develop emotional and social self-esteem, children identify with parents, peers, and others in the cultural milieu (Bandura, 1977). If gifted young people undertake non-stereotypical roles, it may result in limited acceptance. How far can they go in risking behaviours that may make them highly visible in schools? Situational demands and constraints also impact self-perception of agency. Over half of the gifted do not achieve their tested academic potential because of insufficient motivation to achieve or inappropriate instruction and course variety (Piechowski & Colangelo, 1984; Delisle, 1992).

Where one's inner life is in harmony with one's personal ideals and motivation, conviction emerges, and ultimately, will and action unite and operate effortlessly (Piechowski, 1991). How do gifted young people harmonize their need for affiliation and their need for independence; their sense of instrumentality and their personal abilities; their need for achievement and their need for acceptance? Clearly, there is not one path

to full-functioning, to happiness. Those who cannot find meaning and direction for the inner self may not participate in their own development of potential. However, those who adapt flexibly to a variety of conditions can bring their intelligence to bear in creating their own life satisfaction (Walberg, et al, 1994).

Identity development and emotional growth will occur if individuals take advantage of their cognitive, emotional, and moral strengths (Adler, Rosenfeld & Towne, 1992). This study will identify the emerging identities described by gifted young men and women in order to give educators another look at how these young people perceive their world.

Methodology

Eight females (ages 22 to 23) and six males (ages 17-18) who had been identified for gifted programs in school systems in Ontario responded to interviews or questionnaires. Interview questions and questionnaire statements were open-ended, pertained to aspects of being gifted, and were answered individually. A case study of a gifted youngster was also provided, and participants were invited to give advice as to career decisions and explain personal motives for their suggestions. Analysis of the data identified ideas, emergent themes, and patterns (Bogden & Biklen, 1992) that become the framework for this paper. Comparing and contrasting the descriptions of the males and females conclude with similarities and differences. No attempt will be made to generalize from this small sample to gifted youth as a whole.

Results

Independence. Gifted males and females both reported they felt confident when making decisions, particularly when impacting on passionate, personal interests. They saw themselves as independent individuals whose parents helped encourage them to be this way.

The males indicated they like to seek advice in order to make informed decisions. This advice could be sought from parents, family, or friends, though not from teachers. Females, on the other hand, said that their love for their parents would always influence their decision-making, but that they were mainly self-reliant in this regard.

Achievement. There were more differences than similarities in this factor. The one similarity appeared to be that both groups described themselves as highly able learners who set high goals for themselves.

The gifted males spoke poorly of their secondary school experiences in both "gifted" and regular classrooms. Secondary school was irrelevent to their life goals which were oriented towards their passions and relationship building. School was for learning social skills, not for achieving "other-imposed" goals, and they worked better under pressure in this regard. Success in others' eyes was not necessarily success for them. However, the goals they set for themselves were so high as to be unrealistic, and they were frustrated from feeling satisfaction.

The females, on the other hand, sought acceptance by secondary school teachers as a requirement to achieve the high career aspirations they had set. However, they unanimously agreed that school systems lacked understanding of their needs and that school counsellors "were invisible" for them.

Self-image. The gifted young people described themselves as intelligent, stubborn, determined, empathetic, flexible, and open to new ideas and people. They were generally comfortable with themselves, though both recognized feelings of being different from normative peers.

When outside expectations were factored into the picture, differences were highly evident. The males were relaxed, describing themselves as "lazy and sensitive." They saw their self-image strongly tied to their abilities and skills; outside expectations were not allowed to impinge on this. They also indicated a lack of concern about career goals or financial success: happiness was their main goal.

On the other hand, the females described themselves as hard workers who were unable to relax sufficiently in life. They perceived themselves as self-sacrificing and nurturing. They doubted themselves and put themselves down but also cautioned, "Looks fade; smarts don't. Learn to like yourself." The females reported a strong drive for career and life success, to the point where a number of them said they had neglected their childhood "fun," choosing to delay gratification and push themselves without thought of "what I really wanted out of life."

Self-efficacy. In viewing this factor, both groups said they had self-imposed ideals, with strong family influences. Once again, there appeared to be more differences than similarities.

The males reported a clear sense of coping skills with a strong belief in themselves as successful, capable, and growing individuals. They had a strong internal locus of control and did not dwell on failure or weakness.

The females, however, were uncertain that their goals would be met. They were fearful about their future ability to balance a career and marriage. An ongoing struggle with femininity and intelligence caused them concern and appeared to stem from their reported early socialization to female roles. The expectations of others were internalized much more than in the males.

Affiliation. In early adolescence, both groups reported a sense of isolation and a need to belong to established groups. Being gifted was not an asset for them. In later adolescence, however, both groups valued affiliation over achievement in the school settings. No mentors were reported from females or males.

Males reported a strong sense of belonging in both in school and out of school social groups. They were adamant in their conviction that affiliation required self-confidence and "self-confidence comes with age." At ages 17-18 they felt that they had arrived!

The females did not perceive such a strong sense of belonging. However, they saw their giftedness as "a vehicle to meet other people with similar interests." They valued affiliation and worked at it, but they did not feel that they always achieved it.

Social acceptance. Both groups reported they felt secure in the limited friendships that they had where "I can be myself." They were also unwilling to conform to certain sexual stereotypes such as the "superwoman" or the "jock."

The males perceived that they made friends easily because they were confident in themselves. They described their friends as a supportive and strongly knit group. Being comfortable with their existing friendships, however, kept them from consciously seeking out new ones.

The females perceived they learned more "from people and things, not from school." Although they wanted to be liked by others, they saw themselves as so work-focused that they forfeited play and childhood. Sometimes they were cautious of making new friends because they feared rejection or pain, and some deliberately chose "ungifted" friends to more easily fit in with the popular crowd. They were able to talk about the importance of a balanced life, but they appeared not to be able to live this balance in adolescence.

Conclusion

The study highlights several aspects of identity development of gifted youth. In particular, issues of power, control, and outside influences highlight the impact of gender differences.

Stereotypical images appear to influence the identity development of these gifted youth. The "geek" or "nerd" image seems to be a stereotype the gifted males have embraced. This image is less than a normal man and represents an existing reality. However, by focusing on the "hip," not the "geek," the gifted males have attempted to accommodate this reality, thereby turning powerlessness into control. Such behaviour gives power to these males who use it as a defense.

The "superwoman" picture seems to be a stereotype for the gifted females. This image is more than a normal woman and represents a positive, yet unrealistic future. It feeds a sense of perfection that pushes the gifted females into an unbalanced "other focus" for success in life. This imbalance, in turn, creates powerlessness that leads to self-doubt, thus relinquishing control.

Why did the males choose a positive response to an external stereotypical image while the females chose a response that relinguished

their power? Life experiences are different for males and females. The males' coping skills equipped them with a sense of control over their lives, providing a framework for an easy-going and pragmatic attitude. Affiliation was easy to achieve. Their strong internal locus of control may be either a mechanism for defense or an indication of a healthy developing identity. Their confidence may represent a refusal to dwell on feelings, an unformed identity, or a realistic description of their development.

On the other hand, the females appeared to show a combination of both internal and external control when making life decisions and describing life's experiences. Perhaps they value connection more than males, and, therefore, attend to the views of others more. This could be seen as their strength, though it could also be the ongoing result of doubts built from earlier years. They fear an inability to cope and relax. Perhaps they find it too dangerous to express their own opinions and desires, censoring themselves and turning to others for additional support or approval. Their continued striving for a good balance between affiliation and achievement may mean that the ideal they hold of relationships is difficult to achieve.

While both groups were strongly influenced by their parents, females continued to be manipulated by feminine stereotypes. Society may be more influential than parents. Parents, however, while attempting to encourage excellence, may simultaneously foster patterns of powerlessness in their gifted daughters. On the other hand, stereotypes of maleness did not challenge the confidence of the gifted males, and their sense of control remained intact. Society influences parents, children, teachers, and school systems alike. The stereotype of the gifted child may still be alive and well in the world: the brainy, but nurturing female; the brainy, but nerdy male. Only strong identities can withstand these pressures. From the perceptions of our young people, it appears that some have been more successful than others at identity building: males more so than females.

It has been said that we make our children truly human by helping them develop intimacy and a strong identity. Helping everyone to understand that giftedness is different but not unequal means embracing both differences and equality at the same time. Understanding the emerging identities of gifted adolescents demands a recognition of their social and emotional needs as well as an acceptance of their continuum of development. From this, a true sensitivity will arise, and systematic attention to their education can occur.

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Provisions for Gifted Students in Regular Classrooms

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There has been considerable interest in the education of gifted and talented children since the Marland (1972) Report was issued over 20 years ago, and many programming models have been developed to meet their needs (see especially Maker, 1982, and Renzulli, 1986). Although the models vary from philosophical, administrative, and instructional perspectives, they have in common a concern for the educational requirements of gifted and talented children arising from their unique characteristics as highly able learners. These needs require curricular modifications in the content (what is learned), the process (the instructional methods used and the thinking processes students are expected to use), the learning environment (both psychological and physical), and the product (what students produce). The modifications should reflect changes in quality (a different program) rather than quantity (more of the same), and must build upon and extend the characteristics that distinguish gifted students from other students (Maker, 1982).

The unique needs of gifted children have been well established in the literature, and educators such as Clark (1992, pp. 240-259) have published comprehensive lists, accompanied by suggested organizational patterns and examples of appropriate classroom strategies.

It is assumed by many educators of gifted children that there is great benefit, academically, psychologically and socially, from grouping gifted students together for instructional purposes, at least part time (Clark, 1992). The research evidence is very clear that the academic achievement of gifted children is enhanced when they are grouped with their intellectual peers for differentiated instruction in enrichment and accelerated classes (Yewchuk, 1994). The current move towards inclusive education which has been spearheaded by advocates of severely handicapped students such as Stainback and Stainback (1992), flies in the face of the research evidence on grouping by ability. Once again, as has happened so often in the past, the pendulum of public opinion and educational practice has swung away from gifted children. We need to continue advocating for the special programming needs of gifted students, but in the meantime, what can be done to salvage the situation in the regular classroom?

Before we examine some general educational provisions for gifted children it would be fruitful to reiterate the six basic rights of all children in schools proposed by Parke (1989, pp. 47-48).

- All students have the right to learn at their own pace. Quick learners should be allowed to move through the curriculum at a faster pace than slower learners.
- All students have the right to receive instruction that is at their achievement and ability level, irrespective of grade level. Thus a third grader reading at fifth-grade level should be receiving fifth-grade instruction and materials.

- All students should be given the opportunity to develop independent thinking skills, e.g. problem-solving techniques, higher level inquiry skills.
- All students should be prepared to be lifelong learners. They should participate in classroom decision-making and assume responsibility for their own learning.
- All students should be allowed multiple means of expressing what they know and how they feel. This allows for differences in cognitive abilities and learning styles.
- All students should be encouraged to develop a respect for themselves and others, and to accept individual differences.

To these must be added several basic rights of teachers if the inclusive classroom is to accommodate children with special needs at least as well as special class settings:

- Reasonable number of students in the classroom, with assistance of aides.
- Adequate and appropriate preservice and inservice training in teaching children with a full range of abilities in the classroom.
- Adequate support from, and collaboration with, "experts" in various areas of exceptionality.
- Support and involvement of community and parents.

When class sizes creep up too high, and support is eliminated or radically diminished, even experienced classroom teachers find it difficult to accommodate all the learning differences in the inclusive classroom. Here is how a teacher with a graduate degree in gifted education describes the situation:

> My frustration at not being able to adequately challenge the gifted students in my heterogeneous classroom grows each year. With 28 students of varying levels and abilities and special needs, I often find the most neglected are the brightest. Even though I know what to do for these youngsters, I simply do not have the time to provide the differentiated instruction they need and deserve. Instead, my attention shifts, as it has in the past, to the students in my class with special learning problems who are already terribly behind in second grade (Morgan, quoted in Renzulli & Reis, 1991, p. 33).

Assuming that the basic rights of students and teachers are met in the regular classroom, what provisions can be made for gifted and talented children? There are four main types of provisions that can be used singly or in combination: clustering, compacting, differentiation, and acceleration.

Clustering

This is the practice of grouping together four to six gifted students in an otherwise heterogeneously assigned classroom with a teacher who has been trained to adequately differentiate the

curriculum for gifted students. Such an arrangement benefits the gifted students by providing the contact and interaction with peers of similar ability that is essential for normal social and psychological development. It is more efficient for the teachers, because only the cluster teacher needs to plan a differentiated program for gifted students. All teachers who wish to teach gifted students and have the requisite training, can rotate into the cluster every two years (Winebrenner, 1992).

Compacting

The basic purpose of compacting is to minimize repetition of material that is already known by the student, and to create a more challenging learning environment for that student. Compacting involves exemption from specific segments of the regular curriculum, and/or streamlining/acceleration of skill activities in areas of strength.

The procedure for curriculum compacting involves three steps, which may be executed with a form called "The Compactor" (Renzulli & Reis, 1986).

1. Identification of subject areas in which a student might be considered for compacting. The teacher might watch for students who seem bored during instruction time, daydream, or finish tasks quickly and well. Student records, standardized tests and previous teachers might also provide indications of areas of strength.
2. Diagnosis of skills and content which have already been mastered. In the basic subject areas such as reading, language and mathematics diagnostic instruments are usually available in the form of pretests, end-of-unit tests, or summary exercises. Where such diagnostic tools are not available, the evaluation planned for the end of an instructional unit can also be used as a pretest. This step involves the documentation or proof that the student has mastered the basic skills and knowledge which are to be taught.
3. Specification of individual program plan of advanced level acceleration and/or enrichment activities, in accordance with the interests of the student, availability of resources and philosophy of the school/program. The activities must be seen as meaningful and challenging by the student, or the whole purpose of compacting is undermined.

Winebrenner (1992) has developed an interesting and simple strategy for compacting which she calls "most difficult first". When seatwork is assigned following teaching of a concept as in math, students are given the option of attempting the most difficult items first, as designated by the teacher. Students who get at least 80% correct on these items are then free to do whatever they like (including nothing), provided they don't bother anyone else or call attention to themselves. This strategy works well when students have access to a classroom enrichment center containing materials that extend concepts being taught in class which they may choose to work on. Enrichment activities are not graded. If a student already knows the concepts which are being taught, then "most difficult first"

needs to be replaced by the more extensive and comprehensive compacting procedure outlined by Renzulli & Reis (1986).

Differentiation

Curriculum differentiation refers to the development of curriculum which matches the learning needs of a particular group of students and the educational expectations held for them. In the case of gifted students, a differentiated curriculum includes the adaptations mentioned above in content, process, learning environment, and product to extend and develop higher level abilities such as research skills and productive thinking skills. Curriculum differentiation for gifted students is based upon the following set of principles (Kaplan, 1986, p. 183):

- Present content that is related to broad-based issues, themes or problems.
- Integrate multiple disciplines into the area of study.
- Present comprehensive, related and mutually reinforcing experiences within an area of study.
- Allow for the in-depth learning of a self-selected topic within the area of study.
- Develop independent or self-directed study skills.
- Develop productive, complex, abstract and/or higher level thinking skills.
- Focus on open-ended tasks.
- Develop research skills and methods.
- Integrate basic skills and higher level thinking skills into the curriculum.
- Encourage the development of products that challenge existing ideas and produce "new" ideas.
- Encourage the development of products that use techniques, materials and forms.
- Encourage the development of self-understanding, i.e., recognizing and using one's abilities, becoming self-directed, appreciating likenesses and differences between oneself and others.
- Evaluate student outcomes by using appropriate and specific criteria through self-appraisal, criterion referenced and/or standardized instruments.

Kaplan's (1986) model which she calls the "Grid", organizes the components of a differentiated curriculum into a sequential procedure of five steps:

1. Select a theme as the organizing element under which a variety of topical areas can be subsumed e.g., "extinction" rather than "dinosaurs" provides more scope for generalizing and exploring relationships.
2. Determine the content (the knowledge and skills) which the students are expected to learn. It should allow for the integration of subject areas, be consonant with the needs, interests and abilities of gifted students, and establish relationships between past, present and future.
3. Select the processes and skills students will be expected to learn. These include basic skills (e.g. sequencing and classifying), research skills (e.g. gathering data), productive thinking skills (e.g. critical thinking, creative thinking, problem solving, logic) and general skills (e.g.

learning-to-learn skills, life skills, and the skills of technology). All categories of skills should be integrated into curriculum planning.

4. Select the product, which may take a variety of figural, visual, oral and written forms. The product should communicate the content and skills which have been mastered.
5. Plan lessons to implement the components of the curriculum. Appropriate activities are designed to facilitate students' achievement of learning goals, with provisions for individualization to meet the needs, interests and abilities of individual students.

Interested readers are referred to the document *Challenging Learners: Teaching Units* (1994) published by the Gifted and Talented Education Council of the ATA for examples of curriculum differentiation in elementary science and junior high language arts.

Acceleration

Acceleration refers to progression through an educational program at a faster rate or a younger age than usual. Although practised in many forms and supported by research, there is a general view that acceleration is some how "unnatural" and potentially harmful to accelerants (Southern & Jones, 1991).

Acceleration can take many forms, which can be categorized into three basic types:

- grade acceleration - skipping a grade, entering kindergarten or grade 1 a year early, entering junior high, high school or college with full standing a year or more earlier than usual.
- content acceleration - covering the scope and sequence of the curriculum at a faster than normal rate. Examples are continuous progress, self-paced instruction, subject matter acceleration, curriculum compacting, telescoping.
- acceleration through out-of-class experiences e.g. mentorships, extracurricular or summer programs, concurrent enrolment, advanced placement, credit by examination, correspondence courses.

The research which has been conducted on acceleration by and large supports its use as a general strategy for meeting the needs of gifted children. "The evidence is overwhelming that acceleration in some of its many forms should be included in any comprehensive set of services for the gifted (Shore, Cornell, Robinson & Ward, 1991, p. 79).

However, deciding on the best service for particular gifted students requires consideration of their individual needs, interests, strengths and weaknesses, their social, physical and psychological maturity, whether they want to be accelerated, and the preferences of the parents.

Conclusion

In the regular classroom, gifted students typically endure classroom instruction and practice of skills which they have already mastered. They know at least 50% of curricular content upon grade entry (Reis et

al., 1992). Yet according to an observational study of 46 regular third and fourth grade classrooms in the United States, gifted students received no instructional or curricular differentiation in 84% of cases (Westberg, Archambault, Dobyns, & Salvin, 1993). Their educational needs were ignored. The four general provisions which have been described in this article can be utilized as viable alternatives for beginning to accommodate gifted students in regular classrooms.

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